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EUROPEAN AXIS MANPOWER SUMMARY:

THE GERMAN ARMED FORCES

Description

Analyses of various aspects of the manpower position of the German Armed Forces.

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EUROPEAN AXIS MANPOWER SUMMARY:

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I. ACTUAL STRENGTH, LOSSES, AND MOBILIZATION OF THE GERMAN ARMED FORCES, 1939-1944

The accompanying table summarizes estimates of strength, losses, and mobilization in the German Army, Navy, and Air Force. The figure for actual strength in May 1939 is drawn from the German census of that month. Strength figures for the Navy and G. A. F. included in E-2 are approximately those of the agreed US-British position. Strength estimates for the Army are based on the identification of individual units. The estimates used are 5,500,000 in the Army, 1,550,000 in the Air Force, and 350,000 in the Navy. These estimates include 800,000 foreigners.

No independent estimate of recruitment is included in the table. Figures are drawn from estimates of strength and permanent losses in the periods under consideration.

Table 1. ACTUAL STRENGTH, LOSSES, AND MOBILIZATION OF THE GERMAN ARMED FORCES, 1939-1944

(in millions of men)

	Breakdown	Details (1)	Totals (2)
A	Actual strength, May 1939.....	-	1.70
B	Recruitment, May 1939-June 1941...	+8.42	-
C	Permanent losses, May 1939-June 1941.....	- .32	-
D	Net change, May 1939-June 1941....	-	8.10
E	Actual strength, June 1941.....	-	9.80
F	Recruitment, June 1941-June 1944	+3.39	-
G	Permanent losses, June 1941-June 1944.....	-5.79	
H	Net change, June 1941-June 1944..	-	-2.40
I	Actual strength, ...	-	7.40
J	Permanent losses, May 1939-June 1944.....	6.11	
K	Recruitment, May 1939-June 1944..	11.81	

II. GERMAN DIVISIONAL STRENGTH, BY TYPES: 1939-1944

The increase in German divisional strength since March 1943 should not be interpreted as an increase in size of the German Army. The substantial reduction of the divisional T/O in the case of infantry divisions shows that these units cannot be equated in strength to those of 1943. In addition, the following factors in the apparent increase in number of divisions should be noted. The

rapid growth of the Waffen-SS, a force ennumerated in our last estimate under the category of para-military organizations, has added eighteen divisions to the German total. This accounts, in particular, for the increase in panzer strength. The incorporation of airforce units into the German Army has also served to increase the total number of divisions.

The strength of the German Army has in fact declined significantly since March 1943. The unqualified use of German order of battle figures in terms of divisional units is a meaningless procedure as a measure of German strength.

Table 2. GERMAN DIVISIONAL STRENGTH, BY TYPES, 1939-1944

	Type	Sept. 1939 (1)	June 1940 (2)	June 1941 (3)	June 1942 (4)	March 1943 (5)	June 1944 (6)
A	Panzer	9	14	20	25	27	31
B	Motorized	12	15	20	21	19	14
C	First-line Infantry	85	150	180	179	140	167
D	Second-line	44	61	80	75	94	100
E	Total	150	240	300	300	280	312

III. GERMAN DIVISIONAL STRENGTH, BY THEATER OF OPERATIONS: 1939-1944

Estimates of the disposition of German divisions under A-L, (4)-(6) in the accompanying table are based on the identification of individual units. Estimates for the earlier period are based in part on identification of individual units and in part on global estimates from intelligence sources.

Previous strength figures for Germany (J, (4) and (5) in the table) were over-estimates by approximately 20 divisions. Units previously classified as divisions have been found to be merely administrative staffs.

The danger involved in the unqualified use of order of battle figures, as noted in Table 2, applies to the following table.

Table 3. GERMAN DIVISIONAL STRENGTH, BY THEATER OF OPERATIONS, 1939-1943

	Area	Sept. 1939 (1)	June 1940 (2)	June 1941 (3)	June 1942 (4)	March 1943 (5)	June 1944 (6)
A	Russia.....	-	-	170	190	186	175
B	Finland.....	-	-	-	12	8	7
C	Norway.....	-	15	10	10	8	9
D	Denmark.....	-	5	2	2	2	5
E	France and Low Countries.....	-	80	38	35	31	58
F	Bohemia-Moravia	6	4	4	4	4	-
G	Balkans.....	-	24	24	8	7	23
H	North Africa.....	-	3	3	3	6	-
I	Poland.....	70	20	10	10	12	6
J	Germany.....	74	89	39	26	16	1
K	Italy.....	-	-	-	-	-	26
L	Total.....	150	240	300	300	280	310(1)

IV. GERMAN FIRST-LINE DIVISIONAL STRENGTH, BY THEATER OF OPERATIONS: 1939-1944

The general remarks in the previous tables on the non-comparibility of present German divisions against those of a year ago, or more, apply to the following estimate. While the current divisional figures show an increase over March 1943, strength of the German first-line establishment has actually fallen. The effects of the downward revision of T/O strength have been concentrated on German first-line

(1) Plus two divisions unlocated.

units. Further, it is altogether probable that Germany has been unable to meet the revised T/O requirements of many first-line divisions.

Table 4. GERMAN FIRST-LINE DIVISIONAL STRENGTH, BY THEATER OF OPERATIONS, 1939-1944

	Area	Sept. 1939 (1)	June 1940 (2)	June 1941 (3)	June 1942 (4)	March 1943 (5)	June 1944 (6)
A	Russia.....	-	-	160	180	151	150
B	Finland.....	-	-	-	10	8	4
C	Norway.....	-	15	7	7	5	-
D	Denmark.....	-	5	-	-	-	1
E	France and Low Countries...	-	75	30	23	15	19
F	Bohmeia-Moravia	-	-	-	-	-	-
G	Balkans.....	-	-	20	2	1	12
H	North Africa...	-	-	3	3	6	-
I	Poland	65	8	-	-	-	-
J	Germany.....	41	76	-	-	-	1
K	Italy.....	-	-	-	-	-	23
L	Total	106	179	220	225	186	210(1)

V. PRESCRIBED AND ACTUAL STRENGTH OF THE GERMANY ARMY: 1939-1944

Estimates of the prescribed strength of the German Army under A, (4) - (6) in the accompanying table are based on the identification of individual units in the German Army. For those types of units comprising the bulk of the

(1) Plus two divisions unlocated.

strength of the German Army, good information on prescribed strength is available. The estimate of total prescribed strength is thus firmly based.

No estimate of actual strength independent of prescribed strength has been possible. It is probable that actual strength is below prescribed strength but no direct evidence is available to support this view.

Table 5. PRESCRIBED AND ACTUAL STRENGTH OF THE GERMAN ARMY: 1939-1944

(in millions)

	Breakdown	Sept. 1939 (1)	June 1940 (2)	June 1941 (3)	June 1942 (4)	March 1943 (5)	June 1944 (6)
A	Prescribed strength....	3.2	5.1	6.5	6.8	6.5	5.5
B	Actual strength	4.0	5.5	7.2	6.8	6.2	5.5

VI. PERMANENT LOSSES IN THE GERMAN ARMED FORCES TO 1 JUNE 1944

Permanent losses suffered by the German Armed Forces since the outbreak of war reached 6,219,000 men at the end of May 1944. Of this total 92 percent were borne by the Army while the bulk of the remainder were Air Force casualties. Battle losses before the Soviet entry into the war were

slight and even after that date casualties in other theaters of war have contributed but little to total losses. For the whole of the period since the outbreak of war more than 90 percent of battle losses have been inflicted on the Soviet front. Permanent losses resulting from sickness and injuries are responsible for 17 percent of total permanent losses.

Since 200,000 of the losses were suffered by foreigners serving in the German Armed Forces and 111,000 of the non-battle deaths would have occurred in the normal course of events, the net drain on the German military manpower pool is 5,908,000.

Table 6. PERMANENT LOSSES IN THE GERMAN ARMED FORCES FROM 1 SEPTEMBER 1939 TO 31 MAY 1944

(in thousands of men)

	1 Sept. 1939-22 June 1941 (1)	22 June 1941-31 May 1944 (2)	Total (3)
I. ARMY			
Permanent Battle Losses			
A. Killed.....	59	2,505	2,564
B. Missing dead.....	21	902	923
C. Prisoners of war..	-	550	550
D. Unfit for further service.....	18	828	846
E. Total	98	4,785	4,883

Table 6. PERMANENT LOSSES IN THE GERMAN ARMED FORCES FROM 1 SEPTEMBER 1939 to 31 MAY 1944 (continued)

(in thousands of men)

	1 Sept. 1939-22 June 1941 (1)	22 June 1941-31 May 1944 (2)	Total (3)
Permanent Non-Battle Losses			
F. Deaths	37	107	144
G. Unfit for further service	173	500	673
H. Total	210	607	817
Total Permanent Losses	308	5,392	5,700
II. AIR FORCE			
I. Permanent Battle Losses	-	-	246
J. Permanent Non-Battle Losses	-	-	184
K. Total Permanent Losses	-	-	430
III. NAVY			
L. Permanent Battle Losses	-	-	30
M. Permanent Non-Battle Losses	-	-	59
N. Total Permanent Losses	-	-	89
IV. TOTAL ARMED FORCES			
O. Permanent Battle Losses	-	-	5,159
P. Permanent Non-Battle Losses	-	-	1,060
Q. Permanent Losses	-	-	6,219

VII. AGE-DISTRIBUTION OF DEAD IN THE GERMAN GROUND FORCES

The age-distribution of dead in the German ground forces indicates that the Germans have been fairly prodigal

with their young men. Some 76 percent of all the dead would have been in the age group 19-34, inclusive, in 1943, i.e., were 17-29 in 1941. Only 3.4 percent of total dead were over age 37 and, therefore, outside the combat age group. The distribution of killed indicates that some, though not many, Germans have been used in the front lines at as young an age as 17 years. Troops one year older have sustained more casualties, and during one year of availability as combat troops have sustained more losses than troops 36 years old in 1943 who were available for combat duty during the whole two and a half years covered by the distribution.

Both absolutely and relative to the number of men of each age in the total male population, the 22 and 23 year olds are the two most important, or most used, classes. This relative rate of utilization is shown in Table 7, column 3 through an index of the relationship between deaths and the total number of German males in each age group. Since the index has only one mode, it is to be noted that the sole reason for the bimodality in the age distribution of deaths is the bimodaltity of the German male population, this last a result of the birth famine during the last war.

Table 7. RELATIVE AGE-DISTRIBUTION OF DEAD IN THE GERMAN GROUND FORCES, JUNE 1941-DECEMBER 1943, AND GERMAN MALE POPULATION BEFORE WAR LOSSES, BY SINGLE YEAR OF AGE

Age in 1943	Age Distribution of killed, June 1941-December 1943 (in percent) (1)	Normal Male Population 31 December 1943 (in thousands) (2)	Index of Relative Number Killed per Age Class[1] (3)
17	.10	627	3
18	1.74	658	49
19	6.50	650	186
20	7.29	652	208
21	7.56	683	206
22	8.48	728	217
23	9.05	741	228
24	5.67	564	187
25	3.51	371	176
26	3.44	359	179
27	3.97	397	186
28	4.90	528	173
29	5.55	675	153
30	5.28	694	142
31	4.88	717	127
32	4.70	686	128
33	4.22	716	110
34	3.86	730	98
35	2.83	730	72
36	1.67	717	43
37	1.40	713	37
38	.71	683	19
39	.53	687	14
40	.50	666	14
41	.41	683	11
42	.42	665	12
43	.27	635	8
44	.13	591	4
45	.14	552	5
over 45	.32	516	3
	100.03		

1. Index of ratio of percentage of total killed to number of males in each class, with the average of all their ratios as the base.

VIII. CHANGE OVER TIME IN THE RELATIVE AGE-DISTRIBUTION OF KILLED IN THE GERMAN ARMY, 22 JUNE 1941 TO 31 DECEMBER 1943

A comparison of the age-distribution of deaths in the German Ground Forces for ten quarters in the total period 22 June 1941 to 31 December 1943 reveals a very sharp decline over the period in the proportion of total deaths falling in the age groups which were 20-30, exclusive, in 1941, compensated for (1) by a slight rise in deaths in the age groups which were 31 to 37, inclusive; (2) by the normal expected increase in deaths in those ages 17 to 19 in 1941 as these soldiers grew older and were used more; and (3) by greatly increased deaths among those who were 18 and 19 in 1943. This change is epitomized by the shift in the modal class from age 21 in 1941 to age 19 in 1943. It indicates the progressive resort of the Germans to younger soldiers, after heavy casualties had reduced the ranks of older age groups. Now that this process has reached the 19-year age group, the Germans must turn to extremely young or much older, and in any case progressively less efficient, age groups. If they do not, their numerical front-line strength must steadily decline as the attrition of active combat continues.

Table 8. RELATIVE AGE-DISTRIBUTIONS OF DEAD IN THE GERMAN GROUND FORCES, BY AGE AT DEATH FOR TEN QUARTERS IN THE TOTAL PERIOD

Age	June to Sept. 1941 (1)	Oct. to Dec. 1941 (2)	Jan. to March 1942 (3)	April to June 1942 (4)	July to Sept. 1942 (5)	Age	Oct. to Dec. 1942 (6)	Jan. to March 1943 (7)	Apr. to June 1943 (8)	July to Sept. 1943 (9)	Oct. to Dec. 1943 (10)
17	.3	.4	.2	.3	.2	17	.3	.4	.2	.2	.2
18	1.9	2.8	1.8	2.2	2.2	18	2.6	4.2	5.1	3.8	3.7
19	5.5	4.3	3.2	6.7	10.1	19	12.8	10.9	13.4	16.2	13.9
20	9.8	11.9	8.6	9.8	11.9	20	11.8	9.7	10.1	9.6	10.4
21	14.5	14.4	10.1	9.3	9.4	21	8.4	8.1	6.7	6.8	6.2
22	7.7	10.0	9.7	9.0	7.5	22	7.9	7.3	6.0	6.5	5.8
23	5.1	5.4	5.2	5.3	5.7	23	5.9	6.4	6.1	6.5	5.4
24	5.4	4.3	3.9	3.8	3.2	24	3.1	3.4	3.3	4.4	4.1
25	6.5	5.8	4.5	3.6	3.6	25	2.6	2.6	2.1	2.6	2.2
26	7.0	5.0	5.0	4.7	3.5	26	3.0	2.7	2.2	2.3	2.4
27	6.1	6.6	5.6	6.2	4.9	27	4.2	3.1	2.3	2.9	2.7
28	5.5	5.8	6.8	7.4	5.8	28	4.8	4.7	4.0	3.9	3.2
29	4.9	5.3	6.2	5.7	5.4	29	4.6	4.5	4.9	4.5	4.4
30	5.4	4.2	5.8	5.0	5.7	30	4.8	5.1	4.2	4.4	4.0
31	4.4	3.7	6.1	4.8	4.2	31	4.2	4.7	4.7	4.0	4.2
32	3.2	2.6	4.2	4.0	4.9	32	4.4	4.9	4.4	4.5	4.2
33	2.1	1.9	3.7	3.3	3.9	33	4.4	4.6	4.1	3.5	3.7
34	1.2	1.5	2.2	2.5	3.1	34	4.2	4.8	4.1	3.9	4.7
35	.6	1.2	1.5	1.3	1.0	35	1.7	2.6	3.5	3.4	3.3
36	.5	.9	1.7	1.2	1.1	36	1.1	1.3	2.1	2.1	3.2
37	.4	.3	1.1	.7	.5	37	.9	.9	1.4	1.4	3.3
38	.3	.4	.4	.6	.5	38	.7	.6	1.1	.6	1.0
39	.5	.4	.5	.7	.4	39	.4	.5	.8	.4	.7
40	.4	.2	.4	.3	.4	40	.3	.5	.8	.4	.7
41	.3	.1	.4	.5	.3	41	.3	.4	.4	.3	.6
42	.1	.2	.4	.3	.2	42	.4	.5	.6	.3	.8
43	.1	.1	.3	.1	.1	43	.1	.2	.2	.3	.4
44	.1	.2	.1	.2	.1	44	.1	.1	.3	.1	.1
45	.1	-	.1	.1	.1	45	.1	.1	.2	.1	.3
Over 45	.1	.1	.3	.4	.1	Over 45	.2	.2	.6	.2	.5
Total	100.0	100.0	100.0	100.0	100.0		100.3	100.0	99.9	100.1	100.3

NOTES TO TABLES

Table 6

Line and Column

A-1 This estimate is based mainly upon official German communiques. It is the same as that accepted by JIC.

-2 This figure is derived from a study of officers' obituaries published in a sample of German newspapers. The number of non-commissioned officers and privates killed is derived from the estimated number of officers killed on the basis of information as to (1) the ratio of officers to non-commissioned officers and privates; and (2) the relationship between the death rate of officers and that of non-commissioned officers and privates. The multiple used in "blowing-up" the number of officers killed is 21.2.

B-1 and 2. The number of missing, but in fact killed has been estimated at 36 percent of the number killed. This percentage is based on German experience in the World War (Sanitaetsbericht ueber das Deutsche Heer im Weltkriege 1914-1918, Vol. III.

C-2 Based on analysis of German and Russian communiques and British and American reports of approximately 185,000 German prisoners taken.

D-1 and 2. The estimate of unfit from wounds in battle is based upon the experience of the German army in the World War. The ratio of wounded to killed plus missing, but in fact dead, was 3.2 to 1, and 7.6 percent of all wounded were discharged as unfit for further military service. (Sanitaetsbericht, vol. III).

F-1 Based on strength figures for the German army and an estimated death rate of 4.6 per 1,000 per year for all non-battle causes. Rate derived by Office of the Surgeon General.

F-2,3 Same as F-1, except that for the five winter months, November through March, 1941-42 and 1942-43, a death rate of 9.20 per 1,000 per year has been used.

NOTES TO TABLES

Table 6 (continued)

Line and Column

G-1 Based on strength figures for the German army and an estimated unfitness rate of 20.9 per 1,000 per year.

-2 Based on strength figures for the German army and an estimated unfitness rate of 41.8 per 1,000 per year.

I-3 Extension R.A.F. estimate accepted at the CIC Conference of December 1943 on German Manpower.

J-3 For air crews and air ground crews a normal non-battle loss rate of 15 per thousand per year, based on R.A.F. experience in this war, was used. This rate was doubled for that portion of the G.A.F. in Russia during the five winter months. Flak personnel was treated in the same fashion as the army.

L-3 Extension of British Admiralty estimate accepted at the CIC Conference of December 1943 on German Manpower.

M-3 A non-battle loss rate of 50 per thousand per year, based on British experience in this war was used.

Table 7.

Column

1 The age distribution is derived from obituaries obtained from a sample of 70 odd German newspapers. Data are available for each age class for each month, but in order to secure more stable estimates, three months were grouped. Estimates by single year age classes were prepared for each quarter year from July 1941 through December 1943. The age distributions for the ten periods were then combined with weights according to an estimate of the relative number of killed in each period.

Due to a very strong income and social bias the officer class is highly over-represented in the obituary notices. For this reason rank weights must be introduced before an age distribution for the whole army can be computed. Each of the three ranks was weighted in accordance with its relative frequency in the present German army and its relative death rate as derived from German experience in the last.war. The ranks were weighted so that there would be 16.8 enlisted men and 4.4 non-commissioned officers for each officer.

NOTES TO TABLES

Table 7 (continued)

Column

1 In order to follow the development of each particular age class over the period covered, the age of those who died in 1943 was reduced by one year, i.e., an individual who was killed at the age of 18 in any month of 1943 was classified as 17 in 1942, and the age of those who died in 1941 was increased by one year, i.e., an individual who was killed at age 17 in any month of 1941 was classified as 18 in 1942. After this adjustment, the age distributions for the ten periods were combined as described above.

2 Projection of census data.

Table 8.

Age distribution derived as explained above in notes to Table 3.

The number of observations available varied from 1,745 for the period October to December 1941, when the newspaper coverage was fairly poor, to 14,420 in the period July to September 1943, when newspaper coverage was very good.